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DRY SEASON WILDLIFE DISPERSAL RANGE IN MASAI MARA NATIONAL RESERVE, KENYA: OBSERVATIONS AND RESEARCH NEEDS

Before tha land uses at the peripheral habitats of the Masai Mara National Reserve began to change, the Serengeti Migratory species entered Kenya both from within the reserve through the international boundary with Tanzania and beyond to the Siana Plains in the east. At the time of my field observations, most individuals entered through the Sand River and the Mara River routes. Others entered from the strip between these two internal migration routes. Their movements in the reserve appeared to follow a systematic pattern.

On entering the Mara Reserve from Tanzania, the migratory herds split. From the Sand River migration route, the larger groups usually go through Keekorok Lodge and Posee Plains to the Talek River. On crossing the river they move on to the Governor's camp area in the north which they occupy for most of their stay in the reserve. Small splinter groups, rather than travelling straight on to the Governor's camp area, move eastwards to Olaimutia, traversing the Olemelepo gate area, Talek and Posee Plains to the Governor's camp locality. From the Mara River route, movements are made straight on through the Meta Plains across the Talek River towards Governor's camp. Minor splinter groups traverse other areas before converging on the northerly Governor's camp area.

When forage becomes depleted in the Governor's camp area, the built-up migratory populations move on to the west through the Kichwa Tembo grasslands and woodlands, across the upper reaches of the Mara River (within the reserve), to the Serena Lodge area. They graze on while movements continue to the Oloolo gate in the northwest, back through the same Mara Triangle to the lower reaches of the Mara River in Kenya. The migrants cross the Mara River at the Kenya-Tanzania border to Serengeti National Park. Their return journey to the Serengeti is largely through the Mara River route. While occupying the reserve, Wildebeeste *Connochaetes taurinus* and Thomson's Gazelle *Gazella thomsonii* are observed to return to grazed areas where grazing stimulated grass regrowth was available. The Loita Plains wildebeeste migratory group which returned to the Governor's camp area at the time of the Serengeti migrants peak occupancy, remain after their return to the Serengeti National Park.

EFFECTS OF MIGRANT OCCUPANCY ON THE RESIDENT HERBIVORES WITH SPECIAL REFERENCE TO THE BUFFALO HERDS

Many distinct buffalo herds, some of over 200 individuals, utilized the highlands, plains, woodlands and slopes in the reserve. The buffalo herds were seen in areas ranging from the Mara Triangle in the west through Posee Plains, Talek Olemelepo, Keekorok to Olaimutia sections of the reserve.

I monitored the foraging activities of one herd (hereafter referred to as the Ngama buffalo herd) observed to maintain a grazing circuit between the Ngama Hills, the slopes and lowland range sites before the Serengeti migrants entered the reserve about 10 July, 1982. Apart from tours undertaken between 1980 and December 1981 from Nairobi, the author spent the period from December 1981 to November 1982 in the Masai Mara Wildlife Research Station, near the Olemelepo Gate. In the day time, the Ngama buffalos grazed the slopes and the highland woodland thickets. At sunset, they descended from the highlands to the lowland areas where they used both the water and grazing resources including the lawns of the premises of the Wildlife Research Station. This circuit of grazing movements from lowland range sites (evenings and night time) to slopes and highland woodland thickets during the day, became a routine for the Ngama buffalo herd before the arrival of the Serengeti migrants.

Beginning in July, when the migrants occupied the reserve, the Ngama buffalo herd no longer used their total wet season range. They apparently depended more on the highland thickets and slope ranges for their food. The decrease in

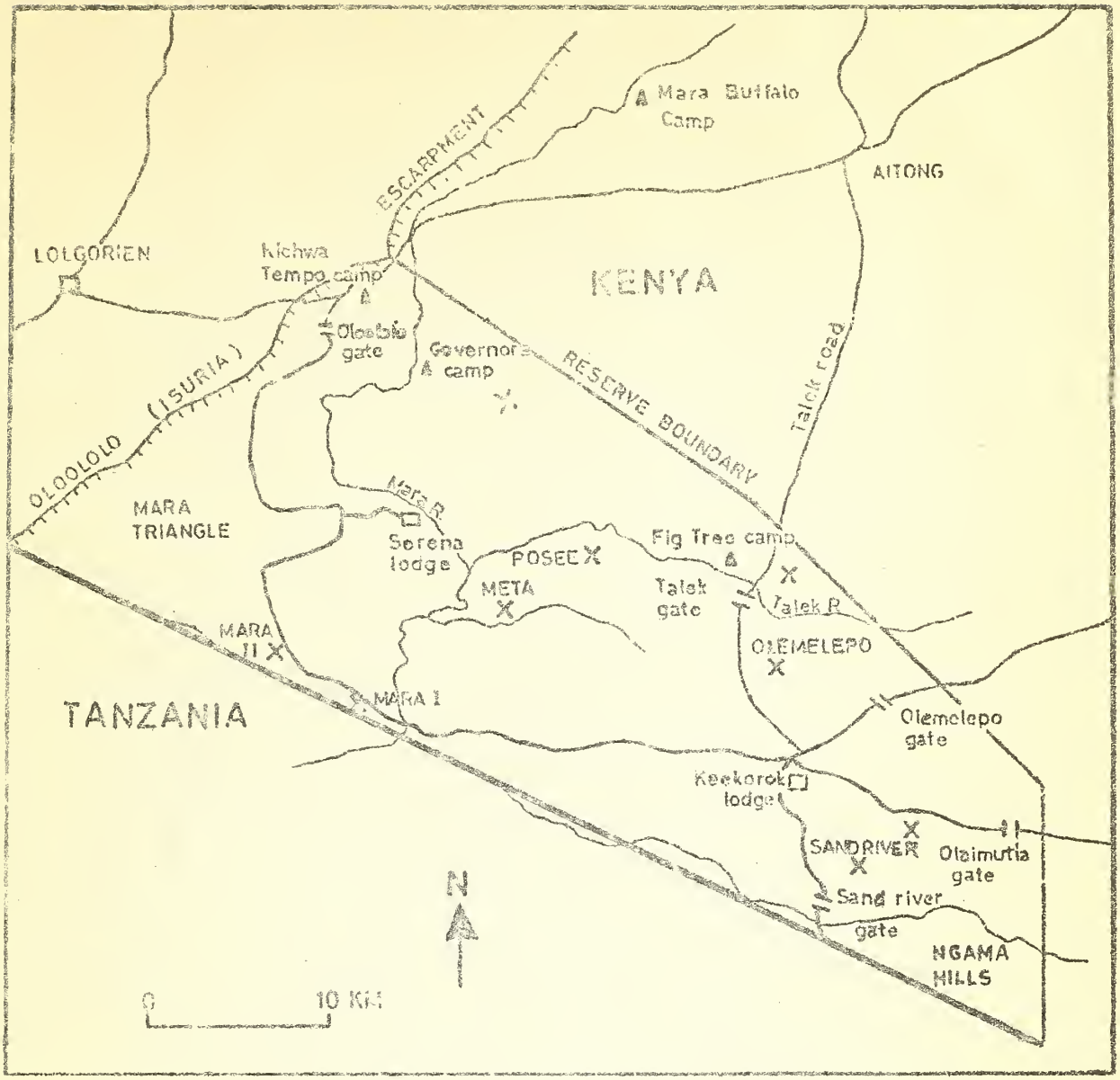

FIGURE 1: MAP OF MASAI MARA NATIONAL RESERVE SHOWING STUDY SITES

X - study sites

the foraging circuit used by the buffalo herd was probably related to the presence of large numbers of wildebeeste, which I suspect constituted potential competition for the buffaloes. Sinclair (1974) observed an overlap in the grass species and preferred parts of grasses eaten by wildebeeste and buffalo. He has further suggested a food resource limitation for the Serengeti migratory herbivores. Stelfox *et al.* (1980) have estimated buffalo population in the Mara region as 25 000 while Sinclair (1974) put the mean crude density of buffaloes in the Masai Mara National Reserve at 9.0 individuals per km^2. Onyeanusi (1983) observed that both the migratory wildebeeste and the resident large herbivores dispersed to the livestock grazing areas outside the reserve boundaries at the peak of the Serengeti migrants occupancy of the Mara Reserve. Localised food resource shortage was reported, and it would seem that the movements of large herbivores beyond the Mara Reserve boundaries might be stimulated by the added competitive effects of the migrants, particularly the wildebeeste (Table 1). On the other hand, both the Serengeti migrant wildlife species and the resident wildlife competed with the domestic livestock at the peripheral ranches.

RESEARCH NEEDS AND SUGGESTIONS

Large herbivore carrying capacity in the Masai Mara National Reserve requires a long-term multi-disciplinary research programme. On a large scale, the Kenya Rangeland Ecological Monitoring Unit is doing a lot to monitor the animal population dynamics range condition and trends etc. On a small scale, a lot still remains to be done in the Mara Reserve particularly in the areas of the migrant population dynamics, herbaceous and woody plant productivity in the dry season in order to gain knowledge of the dry season large herbivore carrying capacity. Another area that equally requires urgent research is the effects of migrant occupancy on the resident wildlife and livestock species populations.

A modest beginning could be made with the buffalo populations. A.R.E. Sinclair was extending his research on population dynamics, including buffalo, to the Mara Reserve in 1981 and [illegible] Dublin (a Ph.D. student) started her investigations involving woodland dynamics in the same year. My short term studies on the Mara grassland productivity and utilization (approx. one year) still requires further investigation. Wildlife management, per se, being essentially a management of habitat/range suggests that long term small-scale herbivore carrying capacity investigation is critical in the Mara Reserve, considering the increasing migrant populations, increasing peripheral land-use and ever changing seasonality of the Mara region.

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TABLE 1

YEAR	SOURCE	AREA COVERED	ESTIMATED ANIMAL POPULATION		
			WILDEBEESTE	OTHERS	LIVESTOCK
1974	Sinclair, A.R.E.	Serengeti grasslands	(mean) 14 500	2380 (Buffalo only)	-
1976	McNaughton, S.J.	Serengeti National Park (on migration)	1 000000	865 000	Nil
1980	Stelfox *et al.*	Mara Region (aerial count)	236 000	606 000	299 000
1983	Sinclair (pers. comm.)	Serengeti/Mara Ecosystem	1 400000	-	-
1983	Onyeanusi, A.E.	Masai Mara National Park*	1 371*	230*	1 536*

* Average Wildlife Occupancy (No./km²) from eight study sites within the reserve, and livestock occupancy at the peripheral Talek area during the dry season (July - October).

SONG MIMICRY, DUETTING AND ANTIPHONAL SONG IN AFRICAN BIRDS

One of the special delights of living in distant places is learning entirely new plants and animals, particularly new birds and their songs. This is a challenge because many look and sound confusingly alike, at least at first. Sometimes this is because we are not yet familiar with the new songs we hear, but it is also that world-wide birds in similar habitats have evolved similar songs. Some of this may be accounted for by the fact that all songbirds are capable to some extent of mimicry including mimicking other birds and some bird families have developed this to a high degree, such as the New World family Mimidae, which includes catbirds, thrashers and mocking-birds.

Birds from different families and orders that have existed sympatrically over long periods of time have evolved certain song patterns that are quite similar. For instance, there are singing styles that characterize the songs of birds of open grasslands. Many have fricative buzzy sounds suggesting those of insects, while others have been described as having tinkling sounds and squeaking songs, and still others have loud and clear whistles. Contrasted to this, the songs of many woodland birds including tropical species are often rich and melodic, being described as flute-like and bell-like and even organ-like. Dr Charles Hartshorne, the University of Texas octogenarian professor of philosophy and ornithologist, has much to say on this subject in his book *Born to Sing*. This difference (to our ears anyway) of song quality may be partly explained by the fact that grassland species belong largely to families not famous as singers - fringillids, emberiziids, ploceids, larks and pipits (though among these are some outstanding exceptions). Woodland birds include more families with exceptional singers - thrushes, chats, solitaires, bulbuls, mimids, bush shrikes, etc. It is noteworthy that while tropical shrikes, starlings and even some kingfishers such as the Woodland Kingfisher have developed remarkable songs, outside the tropics these birds are not known for their singing abilities.

What is mimicry in birds? A precise determination of what is and what is not mimicry is very difficult. Closely related birds (e.g. American House Finches, Purple Finches and Cassin's Finches) may sing very much alike, but this is not considered to be mimicry (or is it?). Sometimes two unrelated species of birds sound very much alike to us. Is bird A mimicking bird B or the other way around, or perhaps it is only our interpretation of a similarity of the songs that leads us to believe that mimicry exists. For example, to our ears a noisy flock of Ruppell's Long-tailed Glossy Starlings flying overhead sounds much like a flock of squeaky parrots at times and has fooled us more than once. The Northern Olive Thrush *Turdus abyssinicus* occurs in East Africa. It looks and sounds very much like an American thrush the American Robin *T. migratorius*. Both are thrushes in the same genus, so even though widely separated they might be expected to have similar songs. In Uganda, a more common thrush is the African Thrush *T. pelios* a paler edition of both the Olive Thrush and the American Robin. What is most interesting is that it has an entirely different song. The Olive Thrush has a chirrupy song much like the American Robin, whereas the African Thrush has a loud song consisting of short phrases repeated three or four times, then changes to another phrase, again repeated, continuing this way for many minutes. These sustained outbursts of song remind an American listener of a Mockingbird, so much so that it would be easy to believe they were somehow related, or at least had at some time in the remote past been associated with one another. Recently, we got a letter from a couple who had not been in East Africa a month. They wrote that "one of our pleasures is hearing the mockingbird, just like back home" - obviously they were hearing the African Thrush. The Mockingbird belongs to a purely New World family, Mimidae, which includes catbirds and thrashers, also famous mimics.

What seems to be true mimicry is widespread among African birds. Williams (1980) lists the following outstanding examples - Anteater Chat, Morning Thrush, Robin Chat, Red-capped Robin Chat, Snowy-headed Robin Chat, White-browed Robin

Chat, R[illegible] Chatterer, Ox[illegible]pecker and Superb Starling. [illegible] list can be greatly expanded. Several species of starlings are mimics (as is the introduced Common Starling in America). Williams mentions additional mimics that are not listed here.

Outside the tropics it is usually only the males that sing loudly sustained songs, presumably to attract females and establish territories. There are rare exceptions. In Southern California we have heard female Black-headed Grosbeaks *Pheuticus melanocephalus* sing beautifully, both on and off the nest. Warbling Vireos sing from the nest occasionally, but these may be males as it is difficult to distinguish sex in vireos.

In the tropics both male and female birds sing equally well, especially in East Africa. They may sing separately or antiphonally, one bird responding to the song of the other bird, usually its mate, or may sing in duets, trios or even choruses. This occurrence among many tropical birds and its virtual non-existence outside the tropics has not been adequately explained. One suggestion is that tropical birds often maintain permanent territories and more permanent mates and both sexes engage in territorial behaviour, including singing. Another idea is that tropical species use this method of calling and responding while foraging in dense vegetation as a way of keeping track of each other. Whatever the reason, these vocal displays of many tropical birds are one of the treats for those of us who enjoy listening to the songs of birds.

A remarkable East African cuckoo, the White-browed Coucal *Centropus superciliosus* has a song or call (the distinction between a song and a call is vague; technically the order Cuculiformes aren't classified as songbirds) that resembles the sound made by water bubbling out of a large bottle as it is poured onto the ground. The vernacular name of this bird is "Water-bottle Bird". In early morning before daybreak this bird renders an eerie but lovely song-call in response to other coucals calling in the distance as well as to respond to the call of its mate, forming antiphonal duets, trios and even choruses as one bird after another answers the calls of the preceding bird. They begin quietly, dipping slightly in pitch, then rising back to the original pitch and tipping over at the end, producing a sound somewhat like ... "blooo-looo-looo-looo-looo-looo-looo" that is carried on by a second bird and then passed on to still another bird and another.

The African Bush Shrikes, family Malaconotidae, are famous for their songs sung antiphonally and as duets. One is the Tropical Boubou *Laniarius ferrugineus*, jet-black above with a soft pearly-pink underside. A bird utters three or four lovely bell-like notes in rapid succession followed immediately by an answering loud "co-wee" from the mate, the entire song seeming to be from a single bird unless the different positions are noticed. The closely related Black-headed Gonolek *L. barbarus erythrogaster* is one of the most attractive birds in Africa, jet-black above and bright blood-red below. After being utterly silent for many minutes it will suddenly make a loud two note "KWEEOO", which is followed instantly by the mate's answering "CHURRR". The most remarkable thing about these performances of both species is the ability of the second bird to respond so instantaneously to the call of the first bird. Several other kinds of bush shrikes also produce these antiphonal explosions.

Unquestionably the most beautiful and accomplished African songbirds are the many species of thrushes known as robin chats. The most common one in many Uganda gardens is the White-browed Robin Chat *Corsypha heuglini*. Another superb singer is the Snowy-headed Robin Chat *C. niveicapilla*. These birds are exceptionally skillful mimics but they also sing superbly alone as well as in breath-taking duets, filling the air at dawn and dusk with their throbbing outbursts of tumultous song. Two White-browed Robin Chats will sit facing each other and one will begin with a whisper-quiet, "weeer, weeer, weeer" gradually increasing in volume to an ear-splitting "WHEEEERR, WHEEERR, WHEEERR, WHEEERR" while at the same time the other bird sings loudly "DEAR DOROTHY, DEAR DOROTHY, DEAR DOROTHY" for awhile and this may change to another theme, perhaps to "DOCKALEEEE, DOCKALEEE,

DOCKALEE" or to "KOOOKALET, KOOOKALET, KOOOKALET" and they continue this way for many minutes in an ecstatic outpouring of melody, each bird seemingly trying to out-sing the other one.

A common garden bird in East Africa is the Grey-capped Warbler *Eminia lepida*, family Sylviidae. It has a wide song repertory of loud whistles, trills and various squeaks. It is an accomplished mimic, borrowing songs of other birds including orioles, bulbuls and robin chats. It also sings regularly in duets and antiphonally. We recorded one in our garden singing "cweeooo, coowee, coowee, CWEEEEEEEEEE" and another time as "purrr, purrr, purrr, PREEEEEEEEEE" (Normally four notes, the last a trill.) and this was followed by an answering burst of short song by the mate, "cooo-cooo-wheeet" or simply by "wheeet" that might go unnoticed if it did not always occur immediately following the other song.

The most difficult birds in East Africa to identify in the field are the warblers (family Sylviidae) and in particular most of the *Cisticola* warblers. They are generally grassland and swamp inhabitants, hiding in rank grass and hardly coming out long enough to be identified at first, and often flying far away when they feel they are being observed. Many look like thin-billed sparrows, with streaked brown backs and pale abdomens. Fortunately, they all have distinctive songs, once learned, but most of their songs consist of whistles, squeaks and trills as the following list of some of their names will indicate: Croaking Cisticola, Rattling, Singing, Tinkling, Trilling, Wailing, Whistling, Winding and Zitting Cistocala. About 18 more species have somewhat less descriptive names. Some cistocals regularly sing duets or even in trios. One is Hunter's Cisticola *Cisticola hunteri*. This bird is abundant on the rim of Ngorongoro Crater in Tanzania and is easily observed near the main park lodges. We recorded the songs of this species there on our Uher tape recorder and wrote down the following field notes. "While one bird sings a rollicking song that sounds like 'turreeeer, turreeeer, turreeeer' the second one sitting beside it on a bush top sings, 'tooweet, too-weet, too-tweet ... tooweet, too-tweet' the two songs blending perfectly to give the impression of a single singing bird. A third bird in a nearby bush sings a more subdued 'tweet ... tweet ... tweet' to complete the trio. These birds will sing repeatedly from one bush for several minutes and then suddenly fly to another bush to repeat the process, all day long."

The distinctive call of the Red-chested Cuckoo of Africa *Cuculus solitarius* is one of the most characteristic and common bird sounds of East Africa. It calls, "wip,wip, wee-oo ... wip, wip, wee-oo" constantly for hours. Some say it is saying "it will rain, it will rain" and call it the Rainbird. Its call greatly resembles that of an American caprimulgid, the Whip-poor-will and suggests that the call of the Red-chested Cuckoo may be borrowed from one of the African Nightjars. However, it can be argued that this is not likely as many cuckoos have rhythmically repetitive calls. What it does point up is that birds may possess similar calls and songs that suggest mimicry when this is impossible, especially when they occur on widely separated continents.

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THE OCCURENCE OF TWO SPECIES OF DOUBLE-COLLARED SUNBIRDS IN THE NAIROBI AREA

Even some very able observers have expressed uncertainty regarding the occurence of both the Eastern Double - collared Sunbird *Nectarinia mediocris* and the Northern Double-collared Sunbird *N. preussi* in Nairobi. Four factors have possible contributed to this confusion.

Firstly, the two may be seen together only infrequently, or in restricted areas. Secondly, many observers appear to have presumed that the Eastern is the one commonly seen and that the Northern, as its name seems to imply, occurs further north in the highlands e.g. in the Nanyuki/Mt. Kenya area. But Britton (1980) mentions the Northern south to Ngong, just outside Nairobi, so this presumption is quite wrong - and a good example of the way in which English bird names are often misleading: cf. the former White-breasted Tit, and the present Rufous-naped Lark.

Thirdly, there seems to have been the feeling that two such similar birds cannot co-exist, i.e. that they must compete for food, or interfere with each others breeding cycles by attempting to interbreed. But both Hall & Moreau (1970) and Britton (1980) note that they can be sympatric (i.e. able to occur and breed in close proximity, and this coexistence seems to be facilitated by two factors. Differing songs and plumages (see below) prevent interspecific courtship and mating. Distinctly differing bills (see below) mean that each species takes distinctly differing food items, so that they do not compete significantly for available food resources. The longer and more decurved bill of the Eastern may, for example, enable it to probe more deeply into flowers in searching for food.

Lastly and reiterating an old moan, the distinction between the two birds given by Williams & Arlott (1980), our most up to date identification text, are, in my admittedly limited experience, far short of adequate.

So, the situation seemed to be that most people thought the birds in Nairobi to be Eastern. Then a few doubted this and one or two thought Northern definitely occured, and so to uncertainty.

We grew passion fruit around the back patio of my former house in Spring Valley, Nairobi, and the superb passion flowers attracted a pair of double-collared sunbirds. These tiny and exquisite individuals took up residence in our small back garden and could be seen outside our windows, at a couple of metres' range, throughout the day.

I assumed them to be Eastern and never really gave their identification a thought until going for a walk along the top of the Ngong Hills recently. We were just returning to the cars when a loud and lispy song erupted from the bushes nearby. After a lot of searching, this noise was traced to a small sunbird that darted elusively around the bush tops.

Finally I got the binoculars on it, and was greatly startled - here was a male double-collared sunbird that looked *nothing* like the one known so well from our garden! So, into the notebook went the startlingly different details and later, under the usual mountain of bird atlas work, absolutely nothing further was done about it.

However, with a wife newly interested in birds and raring for new species, I was threatened with sanctions that included loss of eating rights, and so I made a supreme effort and looked at the skins of the two birds in the collection of the National Museum, Nairobi.

Again, the same shock - these two sunbirds really are different - just go and see the rows of skins lying in that collection and the differences are obvious. And my familiar 'Eastern' at Spring Valley is certainly Northern, while the Ngong bird is certainly Eastern.

From my recent experience of the two birds at Ngong and Spring Valley, and

in the museum's collection, the differences are:

1) the songs differ, though I forget how: one is perhaps faster and more forceful.

2) the bills are very different. The Northern's is shorter than that of a Variable Sunbird *Nectarinia venusta* and is really only curved near the tip. The Eastern's is much longer, as long as the Variable's, and curved throughout its length.

3) the Eastern's breast band is more *fiery, orange-red* than the Northern's,

4) the Eastern's breast band is narrower than the Northern's, but this may not be immediately striking as a field mark: colour difference (3) is better.

5) the Northern's belly is a dull, palish *brown*, whereas the Eastern's is definitely paler and more *yellowish*.

6) the Ngong individual showed prominent bright yellow pectoral tufts not seen on the Spring Valley birds. The museum specimens of the Eastern also have these tufts, while some of the Northern's have rather less prominent ones.

7) in the field and in the museum, the Eastern is brighter and yellower or more golden green on the head and mantle.

8) the upper tail coverts of the specimens were deep violet-*purple* in the Northern and deep *bluish* in the Eastern, but this is of little use as a field character.

To summarise, and as seen on the Ngong Hills, the Eastern is a totally brighter bird, more golden green above, yellower on the belly, and with a narrower, more fiery orange breast band.

The distinctions between these two species should be especially obvious if they are seen alongside each other. Records of the two together, particularly if they are nesting in close proximity, would be of interest.

I am very grateful to Mrs Cecilia Gichuki for access to the collection of skins at the National Museum, Nairobi.

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TREE FROGS

Ecological convergence in the Old World and New World tree frogs is one of the more convincing demonstrations of the role of the environment in producing in widely separated regions almost identical animals. The New World tree frogs are almost certainly derived from toad-like ancestors as is evidenced by their possession of toad-like vertebrae, glandular skin secretions (in some mildly irritating to very toxic) and by the trilling calls many of them produce. Old World tree frogs have a very different ancestry, more closely related to true frogs (Ranidae) but usually are placed in a separate family, Hyperoliidae (= Rhacophoridae). The New World tree frogs (Hylidae) more accurately should be called tree toads and in recent years this has become the common way of referring to them. However wide or narrow is the taxonomic gap between the two families, the fact remains that they are ecologically equivalent with many morphological, physiological and behavioural similarities and traits.

Actually, the terms Old World and New World do not accurately describe the geographical distribution of the tree frogs, Hyperoliidae and Hylidae. The Hyperoliids do not occur in the New World but Hylids occur in Europe and Asia and if memory serves me there are also some in Australia. A better term might be boreal tree frogs and tropical tree frogs, but again that falls down because in addition to boreal species many Hylids occur in the New World tropics. So, it is more useful here to speak of American tree frogs (knowing they occur elsewhere) and African tree frogs, because that is actually what is being compared.

After a long experience with American tree frogs and somewhat less but still more than 25 years with African tree frogs, it is possible and of interest to compare them in certain ways. How are they similar and how do they differ? For instance, most American tree frogs are rather easy to identify, both by their songs and by the use of field guides and keys to their indentifying characteristics. In contrast, African tree frogs - and African frogs and toads generally - are much more difficult to identify with certainity. Possibly this is directly due to the fact that to date no reliable field characters apart from technical ones have been used to identify them. At some future date good field guides, such as are available for birds and mammals, may become available for African frogs and toads etc., but at the present time even the experts in this subject say that it is "a mess". In the genus *Hyperolius*, Sedge Frogs (the main group of tree frogs in the family Hyperoliidae) there may be over 100 species, or maybe less than ten! The early workers (Ahl, etc.) were "splitters", so now it is up to the more modern experts, the "lumpers", to find by sophisticated means how many species there really are. I suspect that at the most there are no more than a dozen "good" species in the whole of Africa.

The songs of American frogs and toads, including tree frogs, have been so long and carefully studied and described that it is relatively easy to identify virtually all of them by song alone, and sometimes even down to subspecies or geographical races, such as in the Hylid genus *Pseudacris*, the Swamp Cricket Frogs of America. Even in recent years a few Hylid frogs have been finally separated, though almost identical, on their song differences, such as *Hyla arenicolor* and *H. cadaverina*, in Arizona-California; both for years called *H. arenicolor* despite quite different calls and a disjunct distribution, separated by the Colorado River that runs between Arizona and California. Through the use of sonograms of the songs and other modern techniques such as serology, the common Eastern Grey Tree Frog *H. versicolor* has also been shown to be not one but several (at least two) "good" species. Many of us during the late thirties and early forties learned the American frogs and toads by song from the excellent recordings made by Cornell University's Dr A.A. Allen and Paul Kellog, pioneers in wildlife sound recordings, who also produced the

first good bird recordings. These were first reproduced on regular 78 rpm. bakelite discs, then after World War Two long-playing discs became available and they were then procurable on one or two long-playing discs. Their title remained the same, "Voices in the Night - the sounds of North American Frogs and Toads". With them one became, if one wished, as familiar with every North American frog and toad as many of us became familiar by the same method with North American bird songs.

The situation in Africa is very different. The Sedge Frogs *Hyperolius*, come in dozens of colours and shapes (minor variations in head shape, etc.) but all seem to have a rather singular song, easily identifiable as *Hyperolius* and well known to everyone in Africa at all interested in sounds. Its song is a monotonous sharp "plink - - - plink - - - plink" like tiny hammers beating on glass, as someone has said. Even the related genus, *Afrixalus*, the Banana Frog, has a similar song, identifiable only by habitat (bananas) and possessing a vertical instead of a horizontal pupil (there are also a few other technical differences). And it is also true that even a sound like "plink" can be tremendously modified, perhaps to "peeeenk", or the cadence stepped up or slowed down, identifying certain species. African *Hyperolius* has a song that greatly resembles two Hylids from America. They are - *Hyla andersonii*, Anderson's Hyla or the Pine Barrens Tree Frog, and *Pseudacris ornata*, the Ornate Tree Frog. The Bird-voiced Hyla, *Hyla avivoca*, of the Mississippi River bottoms, also has a plinking note that greatly resembles that of *Hyperolius*.

Another extremely common East African sound in the evening or the night is that of the tree frog *Kassina senegalensis*. At least in Uganda it is difficult to get away from its sound, yet it is one of the most difficult of all frogs to actually locate. Its call is a loud "Quoit - - - Quoit - - - Quoit - - - Quoit" with about 30 second intervals between calls. One can follow such a sound until within feet or perhaps inches (or should we be scientific and say metres and centimetres?) and yet not be able to locate it. It calls from deep in a bush or in a hole (although they they are not actually fossorial frogs) and the call is ventriloquial so that the precise spot is almost impossible to locate. I was once so close that I could lie down and make a call that was identical to it (by saying "quoit" with my breath withdrawn as I said it) and even before I got the "qu" out this frog would respond. I then literally whispered the sound as a sort of "cu" in my throat and it would instantly respond to that sound too. I knew I was close, so I searched within a foot all around me and never found its hiding place.. *Kassina* tends mostly to call when other frogs are silent, which makes its call so evident. *Hyperolius* however, sings in great choruses and single calls are not common. Yet, they are very easy to locate as they sing from a tall grass stem or reed stalk and keep up a continuous call even when the hand is within an inch or so of them. Though a bit ventriloquial (one always looks for them just a bit further away than they seem to be) they are not at all difficult to capture at at night with a torch. The only problem is the threat of becoming totally deafened by them. They apparently rely on large choruses singing simultaneously so that one's ears are ringing from a hundred loud "plinks" all at once and coming from all directions when one has waded into a colony of them. This is obvously a way of minimising predation on single individuals. Most American Hylids are much more difficult to locate when calling. They are far more wary and usually will totally stop singing once they detect the presence of anyone at hand. This is perhaps because many of them sing from the surface of water, partly hidden among plants, so they detect the movement of the water. One can wade among a singing chorus of *Hyperolius* for hours until every single one is captured, if desired, with no cessation of singing whereas a Hylid chorus stops totally for as much as ten minutes when approached. Then one or two brave ones start and soon the entire colony is in full song again; by this time they are usually less wary and it becomes easier to find singing individ-

uals. A full chorus of singing Hylids is fully as ear-splitting as a chorus of Hyperoliids. It is one of the experiences every naturalist should at some time take advantage of, if he or she has never heard it.

Without any doubt the Pacific Tree Frog of America, *Hyla regilla*, is the most widely known tree frog in the world. Not by sight, but by its song. Cinema goers world-wide are familiar with its steady calls, "CRIK-crek - - - CRIK-crek" and so on, in hundreds of Hollywood epics. It is in the background when the bridge on the River Kwai is about to be blown up .... and you hear its familiar "CRIK-crek" as a small British patrol is silently lying close to Rommel's 15th Panzer Division in the sands of Tunisia, again you hear it in Hawaii, in Canada and you even hear it calling in Robin Hood and other films set in Merrie Olde England. It even occurs in Hollywood "Westerns", where it belongs! But then, knowledgeable naturalists are constantly being insulted by Hollywood sound and camera men in many ways. Marlon Brando of the Afrika Korps is looking through his dienstglass at an approaching column of Montgomery's 8th Army, but I cant help noticing that he is underneath the shade of a very familiar shrub, not found in Africa, the Creosote Bush *Larrea divaricata* of the American Southwest, in full bloom! The total illusion is suddenly gone for Marlon is obviously somewhere outside of Palm Springs in the Colorado Desert, the locale of "desert movies" ever since "The Sheik" with Rudolph Valentino. Robin Hood's "Sherwood Forest" is easy to locate - it is Sherman Oaks, California and the trees are California Live Oaks *Quercus agrifolia* and the trees the Knights of the Round Table joust beneath are alive with the songs of California House Finches *Carpodacus mexicanus*. After their space ship crashes in "The Planet of the Apes" Charleton Heston and his crew are trudging wearily across a moonscape planet wondering if life exists on it, when suddenly right in front of them is a single yellow-flowered plant, which they pick up and admire. It is none other than "Jack-ass Clover" a common member of the family Capparidaceae in the genus *Wislizenia*, found in Southern and Baja California. But this time Hollywood got the last laugh on the cynical naturalists in the audience. We learn only in the final seconds of the film that "The Planet of the Apes" is - you know what, complete with the Statue of Liberty sticking out of the sand. So, maybe by that time Jack-ass Clover grew on Manhattan Island.

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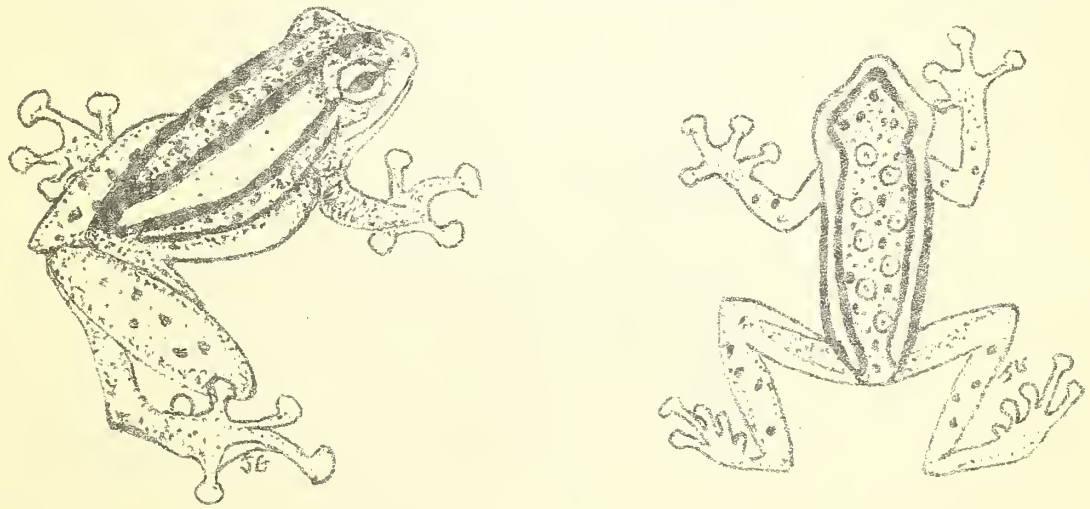

TREE FROGS *Hyperolius* ssp.

THE JAPANESE IVORY INDUSTRY. By Esmond Bradley Martin, 1985. Japan: World Wildlife Fund. pp. 52 illustrated with black and white photographs and drawings.

In this well-produced World Wildlife Fund publication, Dr Esmond Martin, who has studied the ivory trade for the past fifteen years, makes available the results of his investigation into the ivory industry of Japan 'the greatest ivory consumer in the world'. Concentrating on this one country, he makes telling recommendations, backing them up with convincing facts. The book is of value both to laymen and experts, being a fascinating, yet detached, account of Japan's role in the ivory trade.

There are fears that the supply of ivory will drop as elephants decline drastically in numbers, due to illegal killing and diminishing habitat. This is not Dr Martin's theme: he discusses instead the possible effects of the resulting shortage of ivory in one key country.

In Japan, a seal is used in place of a signature. Every adult and every business firm requires at least one for signing cheques and in financial transactions. Fifty five per cent of imported raw ivory is used for these seals. The rest mainly goes to the making of chopsticks, jewellery, piano keys and other musical instruments, in accessories and sculptures. It has been suggested that the vogue for ivory jewellery is due to the increased spending power of young women now in employment. Skilled carvings and netsukes consume only 5% of Japan's ivory imports, however, so the 300 odd master craftsmen would be unlikely to be affected by an ivory shortage. Nevertheless, the livelihoods of many thousands of people in Japan depend on the ivory industry, with annual earnings by carvers, manufacturers, wholesalers and retailers exceeding $40 million.

A characteristic of Japanese life is the protection and promotion of trades and professions by their own associations and two chapters of the book describe the ivory dealers and their associations in Tokyo and Osaka. The dealers themselves take great pride in the workmanship of their craftsmen and keep elegant shops. They produce many publications with photographs of sculptures, increasing positive publicity. Dr Martin stresses that as dealers work closely together they should collaborate even more closely for their common long term interests, thereby avoiding panic buying and greater exploitation of the already endangered elephant. Dr Martin found the traders he interviewed anxious to maintain stability in the elephant populations and hence their industry, by taking only a sustainable yield of ivory. Conservationists must try to inform the traders what the sustainable yield is, despite the difficulties of judging the number of elephants in various populations.

In order to get adequate data on the numbers and distribution of elephants in Africa Dr Marin recommends that the information from a study of the status of the African elephant be made available to the Japanese and other major traders, to encourage them to help regulate the international trade rather than wipe it out. Dr Martin suggests that as the trade was willing to give information for the making of his report, they should be asked to help monitor ivory exports out of Africa. This would reveal which countries act as illegal entrepots, and which over-exploit their elephant populations. The Japanese ivory industry also, could invest in research into the fast dwindling elephant populations, and to find alternative material (in the same way as other industries have had to do, such as the cosmetic industry over whaling).

Written with clarity and style, this publication also presents figures, clear graphs and tables. There is a Japanese language edition (also published in 1985) and I hope it will give wide currency to Dr Martin's well-argued

recommendations. Those concerned for the welfare of elephants should develop an understanding of the Japanese ivory industry. The dealers themselves, need to learn how to allay the fears of conservationists, so that both can work towards maintaining a stable elephant population in Africa.

Lucy Vigne,

POISONOUS SNAKES OF EASTERN AFRICA AND THE TREATMENT OF THEIR BITES. By A. & J. MacKay, 1985. Nairobi: A. & J. MacKay. Price to Members of the EANHS Sh.35/-.

This carefully produced little book, which will fit neatly into a backpack or suitcase, contains a wealth of information on a fascinating topic: poisonous snakes. The core of the book is an identification guide to 32 species of snakes from eastern Africa which could inflict a venomous bite on a human being. These range from the "mildly poisonous" montane viper to "extremely poisonous" species such as the puff adder and black mamba. Each species is illustrated with line drawings of the head from dorsal and lateral aspects and a small drawing of the general body shape. On the facing page is an outline of the diagnostic characteristics of the species based on size, colour and scale patterns, followed by brief notes on geographical distribution, habits and treatment for bites. The latter section can be very reassuring if the bite is from one of the less poisonous species, and for the highly poisonous species the reader is referred to a page where more detailed discussion can be found. The drawings, made from museum specimens, are technically impeccable, and some of them, for example those of the five species of bush vipers (genus *Atheris*), are beautiful.

Before packing the book away as a field guide, however, anyone who buys the book should study the text carefully. East Africa is home to some of the most highly poisonous snakes in the world, and a full envenomation from some of them carries a high risk of death. Alex MacKay has drawn upon a lifetime of experience with East African snakes to present a step-by-step account of treatment procedures for snakebite. After a brief preamble, the introductory discussion begins with an account of the natural history of snakebite, a highly efficient prey capture system. This is followed by a general discussion of snake-human interactions and suggestions for first aid after a bite. Following the illustrations is a section on short cuts to identification which synthesizes a lot of detail. Because the treatment for a bite is dictated by the kind of snake involved, identification is very important. The next section of the book gives explicit information on the medical procedures for various kinds of bites, and the authors rightly emphasize that most of these procedures are appropriate only in a well-equipped hospital. Finally, for those people who spend a lot of time in the field, the book ends with an outline of the basic components of a snake bite kit.

Having worked for a few years on the ecology of non-poisonous snakes myself, I realize that many people will prefer to cling to their irrational ideas about snakes, but for those who wish to educate themselves this book is basic.

James J. Hebrard.

BEAUTIFUL BIRDS OF KENYA. By John Karmali, 1985. Nairobi: Westlands Sundries Ltd. pp.128 illustrated with colour photographs. Price KSh.90/-.

This is a very competent little book, and one of interest for several reasons.

Firstly, the adjective 'little' is not used in any condescending or at all derogatory way. This actually is a small book, only 18 X 13 cm and this diminutive size may point to an increasing trend. Of course we all prefer large format coffee table editions filled with large colour pictures but, of late, these have become increasingly expensive. Two recent arrivals in Nairobi retail

at over Sh.700/- each which is enough to make anyone think twice, particularly if a book's appeal is only of peripheral or purely pictorial interest. In a world where small is often considered beautiful, the day of the well produced, relatively cheap, pocket-sized coffee table edition may well be nigh, with this book as a prime example.

Well produced it certainly is. It costs just Sh.90/-, but has all the feel and appearance of something far dearer. The text is clearly printed and easy to read, and the reproduction of the fine colour photographs is superb, as near perfect as I can recall seeing anywhere.

And the photographs - 90 of them, all in colour - are of course the book's main attraction. John Karmali's high standards of photography need no amplification here. I can simply say that all the pictures are excellent, both photographically and in terms of depicting their subjects. These alone, when taken together with the excellent colour reproduction, at once make this book both a beautiful thing to own and very good value.

There is a refreshing absence of pictures of captive birds that purport to be wild, and of the use of flash, which produces harsh, unnatural illumination and dark, seemingly nocturnal backgrounds. Similarly, John has not succumbed to the modern temptation for easily carried catadioptric telephoto lenses, which so devastate backgrounds with highlights.

I suppose that my favourite pictures are the wonderfully subdued colours of the Darter (the most effective colour photos are often those with the least colour), the superb Lilac-breasted Roller, the Nubian Woodpecker (an infrequently photographed bird), and the beautiful portraits of the Speckled Mousebird and the Bronze Sunbird. There appear to be two errors in the captions of the plates. The rather dark grey plumage and orange-red cere of the bird on page 82 suggest that it is a Dark, not Pale Chanting Goshawk. And the red-eyed bird with a partly orange head on page 63 appears to be a Golden, not Golden Palm Weaver.

The remaining part of the book is, of course, the text. Since he was already in possession of the photographs necessary for this publication, the compilation of this text was probably John Karmali's main challenge. I say this because, to be successful he had to hit the very narrow mean between writing that would have been too learned and dry, and that which is merely a trite and meaningless accompaniment to the fine pictures.

He has succeeded. The text is well and simply written and easy to read. He puts over some reasonably complex concepts, including some quite abstract geology, in simple language, which is an achievement for any author. The interested reader can find out about such topics as the carrying of water in the breast feathers of sandgrouse, or pigeon's 'milk', or the introduction of fish into Lake Nakuru and the subsequent breeding of pelicans on Lake Elmentaita without wading through a mass of intricate detail. It is a pity that no further reading list, no matter how brief and general, is included. It would be useful to direct the interested reader to the more informative of the many books and papers on Kenya and/or the various phenomena alluded to in the text. There actually appears to be a single reference - 'Brown (1973)' - on page 37: perhaps a bibliography was mooted but then deleted.

After a short preface, the introduction provides a brief but very useful account of just how rich is Kenya in birds - rightly omitting a dubious species total for Zaire, Kenya has more bird species than any other country in Africa and, in the world, is surmounted only by the three richest countries of the 'bird continent', South America. The author then goes on to briefly discuss the causes of this ornithological wealth, in Kenya's very diverse habitats. His summary of these habitats is good, although a little more relation of these to Africa's main ecological zones would really have completed the story.

The rest of the text then deals with some more commonly observed birds of seven broad, major habitats, and is very good. Just the thing for the enquiring mind that wants some stimulating, neatly packaged interest. Two minor errors

occur here. On page 64 the incorrect statement is twice made that bee-eaters have an elongated central tail feather, whereas the elongation is in a pair of feathers. On page 72 Kenya's pigeons and doves are given as 16 species, whereas page 62 is correct in noting 19 species.

There are some useful cross-references between chapters, and an index that locates each species' text and illustration(s).

So, all in all, a very well done second book from the Society's Patron and the second in a series on Kenya that Westlands Sundries Ltd., the enterprising publishers, have every reson of which to be proud.

Adrian D. Lewis.

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TANZANIA AGAIN !

Late in July this year, Wildlife Clubs of Kenya wanted to visit the Northern Tanzania Parks. This was to pave the way for a visit in December by a bus-load in the W.C.K. Bus. Having lived in Arusha for four years during the sixties and visited the parks regularly from Kenya until 1973, I was asked to be the driver/guide in my landrover. Seven junior members from Nairobi School came, with Dr David Pearson, Yvonne Malcolm-Coe and the W.C.K. Education Officer. We were the guests of Malihai Clubs of Tanzania, and had the privilege of free entry to all the Northern Tanzania Parks.

A very heavily loaded landrover crossed the border at Namanga before dusk on Friday 26 July. Would the country have changed a lot? We passed the border checks with astonishing rapidity, and there was the familiar narrow but good tarred road across the plains to Longido. We celebrated with tea and biscuits as the spotted morning warblers and yellow-necked spurfowl wished us all good night.

After a night at Oldonyo Sambu at the Lutheran Training Centre, we drove to Arusha to meet the Malihai Clubs officials, now housed in the old Boma (which is to become a museum). Then we met a most competent and charming man, David Babu, Director of Tanzania National Parks, his offices now housed in the A.I.C.C. (Arusha International Conference Centre). Yes, Arusha at least had a new look, a lot of new housing estates and fine hotel buildings. The people seemed well-fed, and there were consumer goods in the supermarket. But would the animals (and the tourists) still be in the parks?

We spent seven precious days in Northern Tanzania. The tarred road to Babati is breaking up, but the murram roads both outside and inside the parks are in very good condition. Arusha National Park is still a gem, with the Ngurdoto Crater, the delightful prospect of the west face of Kilimanjaro over that beautiful string of lakes called Momella - only the greater flamingoes were absent.

Manyara Park is still full of animals and still one of the world's great bird spectaculars. Where the freshwater river runs into the lake, there were flocks of yellow-billed storks and three species of pelican with waders in the shallows including sandpipers and in the distance lines of pink flamingoes - plus a great congregation of hippos. Manyara now has pleasant self-help bandas as well as the camp-site.

But the great spectacle was, as always, Ngorongoro Crater. We were too heavily loaded to camp in the crater, and once the sun set, the Simba Camp-site on the rim was almost arctic, with driving rain on the morning we broke camp to go on to Serengeti. But our day in the Crater was idyllic - the browsing herds everywhere, a pair of cheetah brothers (apparently) crossing the track on the hunt, hippos and lions, flamingo on the lake, and (a once familiar sight in the crater) a rhino

white with alkaline dust. we recorded approximately a hundred species of birds in the crater in about six hours.

After the icy rim of the crater the long descent to the eastern Serengeti Plains was almost traumatic. A wave of heat met us as we stopped for coffee at the first turn-off for Loliondo. Almost at once we spotted a "Kenya" violet-backed Sunbird. At the park entrance there were Greater Kestrel, and several lions kept up the reputation of the Simba Kopjes. We found only the resident game around Seronera - the lions each evening at the camp-site were really too close for comfort, and on one early morning stroll Dr Pearson made close acquaintance with an old male who (fortunately) was limping and clearly rather ill. Again our roll of birds reached approximately a hundred, including on a bare tree a trio of Ground Hornbills north of Lobo, on our way back to Kenya to see the migration in the Mara. We hardly bothered to look at the lions at Sand River.

Northern Tanzania is still a beautiful, wild and exciting place. People almost everywhere were welcoming and friendly. The lodges are still being "rehabilitated", although the gift shops are well stocked (but insist on a receipt for everything you buy). Officially, the lodges prefer payment in sterling or dollar travellers' cheques.

We enjoyed an extremely warm welcome from all connected with the Parks and Conservation. The Parks are quite as breath-taking and magnificent as ever, although entrance fees for tourists (including Kenya residents) are really too high and may be self defeating. Considering it was "high season" we saw very few tourists. The only disappointment in a magnificent trip was to find only one of three park museums - that at Arusha - still functioning, and even at Arusha drawers once filled with bird skins were sadly depleted. We should do all we can by moral and other support to enable Tanzania National Parks to preserve one of the world's greatest wildlife sanctuaries.

The "toll" of bird species seen are as follows: Manyara 52 (in one afternoon); Ngorongoro 110; Serengeti 95.

Peter J. Johnston, Box 44486, Nairobi

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NGORONGORO REVISITED

Now is the time to visit Ngorongoro. Portents are that the tourists will arrive in numbers before long. There are rumours that the two lodges on the crater rim and the Lake Manyara Hotel - perhaps other hotels and lodges in the country too - will be properly managed again, and a great effort will be made to revive the tourist industry in the Arusha region.

Early in October our family had the opportunity to join friends resident in Tanzania on a little safari. The locals had the landrover, the tents, the food and had organised it all. We flew in in grand style and were met by them at Lake Manyara airstrip. Incidentally, clearance for private flights into and within Tanzania are issued quickly. Of course we had to fly via Kilimanjaro airport to clear customs and immigration. The airport was clean, all the officials were friendly and we managed to settle all the administrative matters within 45 minutes..

We spent the afternoon in the Lake Manyara Park. There was plenty of game and birds, including migrant waders. We stopped for a sundowner at the hotel. To look in the evening down towards Lake Manyara, Tarangire and see Mount Meru in the distance is one of the great sights in Africa. We spent the night at Gibbs Farm. The Kullanders who own the farm and look after their guests personally are superb hosts and Margaret's cuisine is justly praised by all who have ever dined at the farm: home cooking of home grown produce is her secret. The surrounds

are pleasant, the accommodation simple but comfortable and the birdlife in the garden very remarkable. The farm is situated at the edge of the conservation area and the house is immediately next to the forest. (Gibbs Farm, Box 1501, Karatu, Tanzania. Tel: Karatu 25, Telex: 42041 Pankertz.)

The next morning, on our way to the Ngorongoro Park gate, we drove through one of the most eroded countrysides of East Africa: gully erosion, sheet erosion, wind erosion, all combined due to the abuse of the fragile soils by cattle. The valley all the way up to the Oldeani Farms is over-populated, over-stocked and abounds with examples of inexpert land use. The road to the gate is in tolerable state; within the conservation area it is quite good, except for some fearsome patches of mud up on the crater rim.

Just as we reached the rim, the legendary invisible hand lifted the curtain of dark wafting clouds, and there it was - illuminated by some superb master of lighting, this wonder of the world below our feet!

We collected our guide, John, who is a courteous and knowledgeable young man. He soon realised that we were interested in 'little things' too, and he contributed greatly to the naturalist happenings of the next two days.

The road into the crater (northwest from Ngorongoro village) is better than the old road used to be. We made our camp at the Acacia Tree campsite (there are only four campsites). There was water, the toilet and the shower were serviceable, though there was the mandatory amount of rubbish about. John assured us that the camp was cleaned up regularly. Why is it allowed to be messed up in the first place? But then I will never understand the visitor who travels half-way around the globe who deposits an empty beer-can or a film-wrapper.

The afternoon game drive was eventful. We saw six rhinos, that it about one third of the remaining lot. (There used to be some hundred rhinos in the crater, there are less than twenty now left.)

Apart from the slaughter of the rhinos, life in the crater has not been interfered with, there is plenty of game. The tracks are good to tolerable. There is no track discipline though, which for the lack of traffic is of no consequence, we saw perhaps six other cars in two days.

All in all I think there is more game in the crater than I can remember from previous visits. I have not been there for 15 years. In those days there were a good number of manyattas within the crater. Whether the fact that the Masai were moved out (they are still allowed to herd their cattle down to the Lake Magadi on the crater floor for salt), or whether the lack of tourists or just random change accounts for it, there were more plains game than I could remember having seen, also more buffalo; lions were everywhere. On the other hand, there have been no hunting dog reported in the crater for years and there are very few bat-eared foxes, probably because of distemper or some similar viral disease. There has been no census for some years now, but John was adamant that numbers of wildebeeste, zebra, buffalo and lions have increased, as have gazelles of both variety.

During the night we were visited in the camp by elephants and hyaenas and in our fig tree we had a most vociferous tree hyrax. The morning started with a pride of lion feeding on a zebra near the camp, in attendance hyaenas and both kinds of jackals. The treat was the hippo pool - I always wonder how those hippo got there in the first place? Also the lake is quite large. Presently there were many Lesser Flamingo. To see the bathing flamingo and moreover, the queue of flamingoes awaiting their turn to bathe in the delta of the river is a great spectacle. After lunch we broke camp and headed back to Gibbs Farm. The track leading out of the crater is as arduous as ever, although well maintained. Having said our kwaheri to John we bade goodbye to the crater at the point where Empakai track joins the main road. There is a memorial to all those who lost their lives to save the rhino. Unfortunately, the area around this memorial is full of rubbish, the type of deposits indicating that Tanzanians and foreigners compete in building a monument from consumer waste.

The next morning we walked from Gibbs Farm into the forest. There were signs of game everywhere, droppings and tracks of elephant, buffalo, bushbuck, bushpig and leopard. In spite of the dense population in the valley there were no signs of poaching and tree cutting. It was a pleasant walk. Thereafter we were driven by our friends to Manyara airfield, flew to Kilimanjaro airport and managed to finish all the form-filling and stamping within half an hour. Thus ended a memorable safari to Ngorongoro.

My report would be incomplete without mention of fees and expenses. Everyone who is not a resident of Tanzania has to pay in foreign currency. The park entrance fee is $15 or the equivalent per person per 24 hours. I know that some people will be scandalized to learn this. In my opinion, the Tanzanians are right to charge such fees from visitors. The parks need to be guarded, the roads maintained and the forests patrolled. It always amazes me that people are willing to spend considerable sums on flights, cars, hotels, meals and drinks and expect the park entrance fees to cost less than that of a whiskey and soda. It is a different matter altogether to make parks accessible to residents as cheaply as possible. Indeed the fees for Tanzanian residents are substantially less, almost by a factor of 10, if I remember correctly.

The Tanzanians have managed to preserve the Ngorongoro conservation area in all its splendour. Apart from the decimation of the rhino they have achieved a not inconsiderable feat in preventing wholesale destrucion which threatens some other parks in eastern Africa.

Whether they will be able to find a tolerable balance between conservation and the greatly expanded volume of tourism for which they have great hopes, (and as we were at Kilimanjaro, a Sabena DC.10 just disgorged some 200 tourists) remains to be seen.

Perhaps the fees will need to be hiked even further? Perhaps the crater will need to be policed, poor track discipline and molesting of game preventd by surveillance - a task which could be easily accomplished by installing and manning a few telescopes on the rim. Discarding of rubbish ought to be fined. (As we left the conservation area we came upon two cars of Italian tourists. They were just having a little coffee break. When they drove off, the site where the two cars had stood was outlined by kleenex, coca cola cans, bottle tops, cigarette butts, film wrappers and plastic bags.)

Those who do not have the good fortune to have Tanzanian friends able and willing to organise a car and safari paraphernalia can of course take their own vehicle across the border. (Four wheel drive mandatory in the crater).

The bureaucratic framework required for such an adventure is formidable, so I understand, but one may hope that brotherhood between our nations will prevail and as the volume of traffic increases, perhaps the number of forms to be filled out will decrease

Lastly, one can buy a complete safari in Arusha and travel in expensive luxury. Whichever way, the safari to Ngorongoro is an unforgettable occasion.

Imre Loefler, Box 47964, Nairobi.

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NOTICE

Little damaged specimens of birds, such as road 'kills' either fresh or deep frozen, are of use and interest in the Bird Room at the Museum. They can either be made up as skins or as skeletons.

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SHIKRA PREDATION ON UGANDA WALL GECKO

On the morning of July 25, 1985 I was typing a letter to an old friend when suddenly there was a resounding bang on my open study window and I had a first impression of a large bird, a hawk or a pigeon, attempting to get through my window screen right beside me. It flew directly to a lower limb of a tree in view from the window, where it proceeded to tear up and swallow a small lizard. The bird was a Shikra *Accipiter badius* and the small lizard was a wall or house gecko *Hemidactylus brooksii angulatus* abundant both inside and outside of almost every house and building in the Kampala area.

By sheer coincidence, my desk was littered with manuscript pages of an article I am writing of a two year study done here in Uganda on this gecko. The section on predation mentions three records of snakes (*Philothamnus irregularis*, found in the study area - Makarere University campus) taking geckos; and also the fact that some of the geckos harbour the immature stages of an acanthocephalan parasite *Centrorhynchus*, possibly *C. milvus* or *C. amphibus* that occurs as an adult worm in falconiformes and in paratenic hosts such as lizards and snakes. I hypothesized that a possible predator on the geckos was the African Kite *Milvus migrans* which might become infected with the acanthocephalans from eating geckos. Now, I have first-hand evidence that Shikras may harbour acanthocephalans as well. Of course, there are other likely candidates, such as the Lizard Buzzard *Kaupifalco monogrammicus* abundant here and nesting in my garden, though I have yet to see one capture a gecko.

A brief literature search revealed that the Shikra eats a variety of things but chiefly lizards. I have heard this thumping sound on my house before and considered it was probably some bird that had carelessly flown into a window. Now, I will be more alert to the possibility that birds may be capturing geckos off the side of the house. I once watched a Harrier Hawk *Polyboroides radiatus* at Entebbe fluttering along the side of a building just below the overhanging roof and guessed it was searching for young birds in the nests of swallows and swifts. Now, however, I am not so certain about its search activities.

John D. Goodman, Zoology, Box 7062, Makerere, Kampala, Uganda

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PEREGRINE STRIKING DOVE AT NGULIA LODGE

Sitting on the terrace of Ngulia Lodge in Tsavo West National Park one evening in mid October, we witnessed the following: There were elephant, buffalo and impala at the waterhole, the Augur Buzzards were giving their demonstration flights to the envious pilots and just in front of us there was a group of doves, mostly ring-necked. Suddenly the doves flew up, and some three metres from where we sat, at approximately eye-level there was what first appeared to be a mid-air collision between a dove and a larger bird, the latter having appeared from nowhere, but was now sweeping upwards; the dove fell to the ground flapping and was set upon by what was now identified as a large (? female) peregrine. The peregrine grabbed the dove with its feet, spread its wings so as to protect its prey and pecked at the dove which then stopped flapping.

The peregrine sat there for perhaps half a minute then flew off with the dove clutched in the right foot towards the escarpment where we lost sight of it as it flew down below our horizon.

At home, consulting Brown, Urban and Newman's *The Birds of Africa* Vol.1, I decided that in spite of its size, this bird is likely to have been *Falco peregrinus minor*. I also found (on page 475) that it does occur in the Tsavo thornbush. Further (page 476) that there are few food records but that its main food are probably doves. Well, our peregrine struck a dove, hence this note.

Imre Loefler, Box 47964, Nairobi

PIED KINGFISHERS

On 27 October 1985, while boating slowly round Lesukut Island in Lake Baringo, I watched several Pied Kingfishers *Ceryle rudis* mostly females. Two sitting close together I took to be a mother with her daughter. These were joined by the only male I saw that day. Soon I realized that all the birds I was seeing were individually marked, by the set and size of their black chest bands. One was closed to form a 'V', another bird's band was rounded at its ends, a third, one of the two I thought to be related, had one side shaped just like both sides of her mother's band . . the bird she was sitting with, whereas the other side was quite different. The second line on the male I watched was so thin that it was hard to see even at close quarters.

Sue Silvester, Box 30333, Nairobi.

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OWLS FEEDING ON TERMITES

On the evening of 5 November 1985 during heavy rain, the first rain we had had in our Loresho Ridge West garden, I watched our resident Spotted Eagle Owl *Bubo africanus* striding about the lawn feasting on termites which had emerged with the rain. Peter Silvester arrived home having driven through the Langata Forest also at dusk in heavy rain and reported having seen several unidentified large Owls, among other birds, doing the same thing!

Sue Silvester, Box 30333, Nairobi.

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FALCONS AND EAGLES IN TSAVO WEST NATIONAL PARK

On 20 November David Pearson arrived at dusk to join the ringing group at Ngulia and reported having seen a large flock of up to 400 Eastern Red-footed Falcons *Falco amurensis* going to roost in trees along the road between the main track to Kilaguni and the track off to Ngulia via the Bandas. It was thought that they would still be there the following day; as indeed they were, and a large flock of several hundreds with many European Rollers *Coracias garrulus* among them were watched for some time at mid-day on 21 November.

They were hawking insects, possibly termites though we could not be sure, feeding on the wing; flying and feeding with incredible agility and grace. The European Rollers appeared to catch their prey and then settle either on the ground or in trees and bushes to feed.

On leaving the park on 23 November the falcons were not seen, but on the main track towards the park gate several parties of eagles, mainly Lesser Spotted Eagles *Aquila pomarina* with a few Steppe Eagles *A. nipalensis* among them were watched feeding at the holes of emerging alate termites on the road. They were not bothered by the audience of two cars, but continued hopping and dashing from one termite hole to the next as the insects emerged. They were all in good plumage and looked most engaging on the ground with their fine 'plus fours'.. 29 birds were counted in one group and the total was probably near 40.

David Pearson saw a party of 40 on the road above Ngulia Lodge, about 35 km further south, later that same day. Possibly the same group for, again, there was the same number with Lesser Spotted constituting about 80% of the total, the remainder being Steppe Eagles.

Some other visitors to Ngulia had seen a similar concentration of eagles on the Ngulia airstrip that same afternoon, feeding on the ground at termite holes also.

Obviously, we were fortunate to witness part of the main southward passage of these eagles which are not generally seen in such large numbers on the ground as they presumably fly through at a great height, unnoticed usually.

Daphne Backhurst, Box 24734, Nairobi.

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BROWN HOUSE SNAKE - A HEARTY APPETITE

I acquired a Brown House Snake *Boaedon fuligonsus* during the month of December 1984. Its length was approximately 25 cm and at the moment (August 1935) it is over 50 cm long.

During this period it has consumed 20 Geckos *Hemidactylus mabouia*, 3 Skinks *Mabuya striata* and 8 white mice *Mus musculus*.

On 18 April 1985 the snake fed on two Geckos and one skink, one after the other. On 22 April 1985 it also fed on two mice simultaneously.

The above information does show that a juvenile snake does feed a lot, and grows rather fast.

Pritpal Singh Soorae, Box 44919, Nairobi.

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RECENT E.A.N.H.S. CAMPS

In June we went to Olorgesailie - a select but highly appreciative group of about 25. Yvonne Malcolm-Coe and Peter Le Pelley led our bird walks, and it was quite pleasantly cool most of the day. The Ndegwa children and Nairobi School junior members made sure there were not many dull moments. Our best sighting was an immature Red-chested Cuckoo being fed by a White-browed Scrub Robin.

In September we went to Kiboko Estate where Finn Davey, the manager, had gone out of his way to provide walks along the Athi River with bamboo foot bridges. In this varied habitat we saw riverside birds, birds of the drier bush, Three-banded Plovers and sandpipers in the shallows of a new dam. Dori Brass and Peter Le Pelley did some excellent spotting for us, including a female black cuckoo shrike on an island in the river by some falls, and, just as we were leaving, a small party of Retz's Red-billed Shrikes.

Some of us decided to go up Oldonya Sabuk on the way back. It was so cool and bracing up there. We heard cisticolas and touracoes calling, and had an excellent view of a migrating wheatear on open rocky ground.

But one must now take a couple of armed rangers with the party - one requests them at the gate, so make sure you have room in your vehicle for them

Peter Johnson, Box 44486, Nairobi.

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BIRDWALK AT MUTHAIGA GOLF CLUB, NAIROBI 8 AUGUST 1985

This account must start with an apology. This excursion had originally been planned for another destination, but this venue had to be cancelled due to unforseen complications, and I felt it best to postpone the function altogether. Thus I extracted the notice from the August Newsletter, completely forgetting that it would also appear in the Museum Society Newsletter. This produced really wonderful confusion and so, since it was obvious that at least some members would turn up on the day, I resolved to take them to any destination that came to mind. Many apologies for this lapse.

As it was, the situation was saved by Mary Sinclair, who obtained permission from Muthaiga Golf Club to walk along the boundary of their course and the Karura Forest. The habitat was open bushed and wooded grassland, denser along a stream valley and at the forest edge and 18 participants set out at 7.20 a.m. on a clear, beautiful morning. You may shudder at this timing on a Sunday, but there really is no substitute in birdwatching for an early start, and even an hour earlier would not have been amiss. Even at the altitude of Nairobi, the quality of birdwatching certainly decreases by 9 or 10 a.m.

We walked across the stream valley, along the scrubby edge of some secondary forest growth, and then back across the golf course to the stream valley again. There were few birds in the clear sky. Small numbers of Pied Crows continually moved eastwards, presumably from roosts around Nairobi centre to scavenging areas further towards the city's outskirts. As the day warmed up and thermals started to form, this free lift was utilised by Black Kites, Marabous and Pied Crows, which spiralled up on motionless wings to great heights. The date was too esrly for non-aquatic migrants from Europe and, apart from these three species, the clear sky, so good for birdwatching, was disappointingly free of large birds.

Typical Nairobi garden birds, Common Bulbuls, Speckled Mousebirds, Northern Olive Thrushes, Red-eyed Doves, Rufous Sparrows and Baglafecht (formerly Reichenows) Weavers, were present in plenty. The marked contrast between Fiscal and the Tropical Boubou was well seen. Although the two are similar in appearance, the former is a true shrike, a bird of open habitats and exposed perches, with relatively simple, usually harsh calls. The boubou, on the other hand, is a bush shrike, equally carnivorous but preferring dense tangles of vegetation and with far more complicated and beautiful, often duet, calls.

Birds of the scrubby forest edge included the Yellow-whiskered Greebul, with its monotonous 'chip-chop' call, Yellow-breasted Apalis, Hartlaub's Turaco, White-headed Barbet, Cinnamon-chested Bee-eater, Violet-backed Starling and Black Rough-wing. There were excellent views of a male Brown-backed Woodpecker investigating a hole in a low branch. This was the most uncommon bird that we saw but, rather than being a rarity in the usual sense of the term, i.e. a wanderer that is more common elsewhere, this woodpecker seems to be generally uncommon in Kenya.

The thicker scrub tangles around the stream valley produced Black-tipped Mongoose *Herpestes sanguineus*, Grey-capped Warbler, African Citril and Holub's Golden Weaver. The morning's tally of 48 species was unexpectedly and brilliantly supplemented by an all too brief glimpse of a Cuckoo Hawk (formerly Falcon) in Mary Sinclair's Muthaiga garden. There has been a spate of sightings of this raptor in the Nairobi area recently, but whether these records represent an influx of intra-African migrants (as occurs in the coastal lowlands) or simply seasonally more extrovert behaviour of a resident highland population is unknown.

A.D. Lewis, Box 25296, Nairobi.

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RINGING NEWS

Another recovery of a Kenya ringed bird has been reported recently:

Charadrius mongolos Mongolian or Lesser Sand Plover
Ringed 21.12.82. Fullgrown. Mida Creek, Kenya 3°22'S, 39°58'E
Recovered (caught) Shadikor, Pasni (Baluchistan), Pakistan. 25°13'N, 63°30'E

NEW MEMBERS

The following new members have been elected: Local.

Cynthis Lund Jensén, Box 48117, Nairobi.
William Winter, Box 24571, Nairobi.
John C. Edwards, British High Commission Box 30465, Nairobi.
P.B. Rossiter, Vet.Res.Lab Box 32 Muguga
J.H.S. Pearce, B.H.C. Box 30465, Nairobi.
Y. Keshavjee, Box 42200, Nairobi.
Abdul H Rehmanji, Box 48668, Nairobi.
David M. Gambo, Box 4, Hola.
Mr & Mrs B.F.Wray, Box 39284, Nairobi.
Ms M. Clark/H. Gibbon, Imani School, Box 750, Thika.
Judith C. Close, Box 14972, Nairobi.
Mr & Mrs P.A. Victor, Box 41122, Nairobi.
C.N. Marshall, Box 41736, Nairobi.
H. Mahabir & Family, Box 41122, Nairobi.
Myrtle Spencer, S.I.L. Box 44456, Nbi.
Mrs H. Garland, c/o Lake Baringo Club, Box 47557, Nairobi.
Egerton College, -
Friends World College, Box 526, Machakos.
Cathy Stewart, Y.W.C.A., Nairobi.
Mark C. Ross, Box 30576, Nairobi.
Dhyani Berger, Box 41389, Nairobi.
Kurt Leuschner, Box 30197, Nairobi.
Joyce W. Muturi-Kioi, Nilestar Safari Centre, Box 42291, Nairobi.
Jeremy J. Thompson, Box 43090, Nairobi.

Overseas:

Dr Dolph Schluter, Zoology Dept., University of British Columbia, Vancouver, B.C. V6T 2A9. Canada.
Braa Boyle, 3863 W. King Edward, Vancouver, B.C. Canada V6S 1N9
Anders Bjornstad c/o Inger Nordal Oven Bakken, 16c, N-1345, Osterãs, Norway.
Dr F.F. Willingham, 12310 Gaylawood Dr., Houston, Texas 77066, U.S.A.
Capt. David N. Simpson, c/o Swire Pacific Ship Management, Box 1, Hong Kong.
Richard Friend Allan, 8 Shrubbery Avenue, Worcester, England.
Rose Ann Rowlett, 1401 Redbud Trail, Austin, Texas 78746, U.S.A.
Commonwealth Institute of Entomology, 56 Queensgate, London SW7 5JR, England.

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A LAMENT

Glorious bird who Augurs well
soaring high on a thrmal
pinions fanned reeling
and drifting revealing
a tawny tail

Some hidden hazard tumbled you
stooped to plummet upon your prey!
fractured you lay
a day to die

I found you stiffened
'neath an evergreen
collecting you to be entombed
in naphthalene

and pray that retored
if not to flight
yet for display
you may delight
many who won't have known
the joy of seeing you winging home
gliding across the evening sky

Susan Silvester *

*apropos the notice on page 89.

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The above list supercedes that which appears on the back cover of this Bulletin. The remaining information remains the same.

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JOURNAL

The Society publishes The Journal of the East African Natural History Society and National Museum. Each issue consists of one paper, however, sometimes two or more short papers may be combined to form one number. The aim of this method of presentation is to ensure prompt publication of scientific information; a title page is issued at the end of each year so that the year's papers may be bound together. Contributions, which should be typed in double spacing on one side of the paper, with wide margins, should be sent to the Secretary, Box 44486, Nairobi, Kenya. Authors receive twenty-five reprints of their article free, provided that these are ordered at the time the proofs are returned.

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This is a duplicated magazine issued six times a year, which exists for the rapid publication of short notes, articles, letters and reviews. Contributions, which may be written in clear handwriting or typed, should be sent to The Editor (EANHS Bulletin), Box 44486, Nairobi, Kenya. Line drawings will be considered if they add to the value of the article. Photographs cannot be published.

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The Ornithological Sub-Committee publishes this bird journal five times a year. Cost: EANHS members KSHS.75/- p.a. All correspondence to D.A. Turner, Box 48019, Nairobi, Kenya.

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